

## REMARKS

This amendment is responsive to the final Office Action<sup>1</sup> mailed on December 28, 2005 and should be entered under Rule 116 because the claim amendments merely combine limitations of certain dependent claims into their respective independent claims, thereby narrowing-down the independent claims and requiring no further searching or consideration.

Claims 1-92 were presented for examination and were rejected. Claims 1, 2, 5, 7, 32, 33, 36, 38, 63, 64, 67 and 69 are amended. Independent claim 1 is amended by including limitations from dependent claims 2 and 4. Independent claim 32 is amended by including limitations from dependent claims 33 and 35. Independent claim 63 is amended by including limitations from dependent claims 64 and 66. Claims 4, 35 and 66 are canceled without prejudice or disclaimer. Dependent claims 5, 7, 36, 38, 67 and 69 were amended merely to depend from non-canceled claims. No new matter is added. Claims 1-3, 5-34, 36-65 and 67-92 are pending. Claims 1, 32 and 63 are the only independent claims.

Claims 1, 3, 32, 34, 63 and 65 are rejected under 35 U.S.C. §102(e) as being anticipated by Wallach et al. (U.S. Patent No. 6,292,905, hereinafter "Wallach"). Claims 2, 4-6, 9, 33, 35-37, 40, 64, 66-68 and 71 are rejected under 35 U.S.C. §103(a) as being un-patentable over Wallach in view of Taylor (U.S. Patent No. 5,664,170, hereinafter

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<sup>1</sup> The Office Action may contain a number of statements characterizing the cited references and/or the claims which Applicants may not expressly identify herein. Regardless of whether or not any such statement is identified herein, Applicants do not automatically subscribe to, or acquiesce in, any such statement. Further, silence with regard to rejection of a dependent claim, when such claim depends, directly or indirectly, from an independent claim which Applicants deem allowable for reasons provided herein, is not acquiescence to such rejection of that dependent claim, but is recognition by Applicants that such previously lodged rejection is moot based on remarks and/or amendments presented herein relative to that independent claim.

“Taylor”). Claims 7-8, 10, 13-16, 19-22, 25-27, 38-39, 41, 44-47, 50-60, 69-70, 72, 75-78 and 81-91 are rejected under 35 U.S.C. §103(a) as being un-patentable over Wallach-Taylor and further in view of Bunnell (U.S. Patent No. 6,192,405, hereinafter “Bunnell”). Claims 11-12, 17-18, 23-24, 28-31, 42-43, 48-49, 61-62, 73-74, 79-80 and 92 are rejected under 35 U.S.C. §103(a) as being un-patentable over Wallach-Taylor-Bunnell and further in view of Zondervan et al. (U.S. Patent No. 6,516, 327, hereinafter “Zondervan”). Applicants respectfully traverse these rejections because the applied prior art taken individually or in combination does not disclose or suggest all of the claim elements of Applicants’ independent claims.

To begin with, Wallach is directed to a method for providing a fault tolerant network using distributed server processes to remap clustered network resources to other servers during server failure. (title) The need which it tries to fill is the need for a fault tolerant system for computer networks that can provide all the functionality of (1) uninterrupted power supplies (UPS) which are rechargeable batteries used for backup purposes during power failure, (2) disk mirroring, or (3) server mirroring and which performs these functionalities without additional hardware while smoothly interfacing with existing network systems. (col. 2, lines 43-48; col. 1, lines 47-53) In essence, Wallach discloses a network having a plurality of “clusters”, each cluster having at least a primary server and a secondary server which functions as back-up for the primary server, for failover and failback purposes. Failover refers to the process of passing data flow control from the primary server to the secondary server and failback refers to the reverse process. (col. 14, lines 34-38) This failover and failback technique, which is performed

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in Wallach on a per-resource and per-cluster basis<sup>2</sup>, may rely upon replicated network, or replicated cluster, directory databases, but otherwise has virtually nothing to do with Applicants' invention. Wallach teaches a plurality of "clusters" of primary and secondary servers comprising a network. The primary server is backed-up by the secondary server in the event the primary server fails. This is equivalent to the backup technique which Applicants presented in the prior art section of its specification on page 6, lines 19-23.

By contrast, Applicants' invention does not relate to server back-up. It relates to a computer network having a **single master node**. There is a network of a plurality of computer nodes with a directory database (DDB) distributed throughout the network in each of the nodes. The contents of the DDB is maintained consistent, or is replicated, throughout the network by a master node, in a manner to avoid a single point of failure. The master node has a privileged status as compared to the other nodes. The master node updates each DDB in each node in its network or domain configuration when the configuration changes, such as when a node fails, a network link fails and/or a node is added or removed. A node can be added to or removed from the configuration through the master node or through a non master node. A node can fail under different circumstances in which it may or may not know which node is its master node. Also, a master node can fail and be replaced, or can be replaced for other reasons, by a global administrator. A global administrator is a privileged user compared to other computer

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<sup>2</sup> In the Wallach network there may be different clusters. See Wallach's Fig. 3 for an example of a cluster having three servers. Servers 56 and 54 are described as primary and secondary servers for resource RAID 80 (col. 6, lines 49-54). A different combination of servers in Fig. 3 can be primary and secondary servers for a different resource shown in Fig. 3 (col. 10, lines 40-54). Or the primary/secondary roles of servers 56/54 can be reversed for a different resource. Thus multiple primary servers can, and do, co-exist in a Wallach cluster. The Wallach cluster servers are not limited to one primary ("master") as in Applicants' claims.

network users who has authority to replace or appoint a master node and to configure a domain, and who performs these and other functions by way of computer terminal screen dialogs offered by a graphical user interface (GUI) associated with the computer network. Replication service includes pinging by the master node of its failed or potentially failed nodes, and participating nodes in the configuration use repetitive polling of their master node to aid it in its pursuit of DDB consistency across the configuration. (Applicants' Abstract)

It is clear from the foregoing that the purpose of, and the need filled by, Wallach's invention versus those of Applicants' invention are quite different. Also, the detailed architecture and implementation of Wallach and Applicants' invention are quite different. For example, in Wallach's disclosure, there is a pair of primary and secondary servers for each resource in each cluster. There are multiple resources per cluster and multiple clusters per network, thereby providing multiple primary servers in that cluster and in that network. By contrast, there is only one master node in Applicants' invention. Moreover, since the Examiner reads Wallach's primary server on Applicants' master node (final office Action, page 9, top) this reading is flawed because in Applicants' invention, there can be only one master node for the entire network. For this and other reasons, Wallach's primary server is clearly not Applicants' master node, as further analyzed below.

For example, consider amended claim #1:

In a computer network having a plurality of nodes for interacting with computer network information including both computer data and domain configuration status, a system for managing said plurality of nodes comprising:

- means for establishing a DDB in each of said nodes;
- means for controlling contents of each said DDB to be identical to contents of every other said DDB and in a manner to avoid a single point of failure;
- wherein said contents controlling means further comprises:

means for maintaining the most current of said domain configuration status in said DDB in said each of said nodes;

means for selecting one of said plurality of nodes as a master node;

means for subordinating all other of said plurality of nodes to said master node in a configuration defined by said master node and said all other of said plurality of nodes; and,

wherein said master node includes means for responding to a change to said domain configuration status in a manner to maintain said contents of said each said DDB identical to said contents of said every other said DDB. (Emphasis added.)

Wallach does not disclose or suggest at least the highlighted limitations of claim 1 for the following reasons.

Firstly, Applicants recite, interalia, “means for selecting one of said plurality of nodes as a master node.” (Emphasis added.) Since the Examiner reads Wallach’s primary server as Applicants’ master node, if this were to be a valid association between the prior art and Applicants’ claim, then only one primary server per network, or even one primary server per cluster if interpreting a cluster as a network, could be selected in Wallach. But, as Wallach discloses, there are multiple primary servers per cluster.

For example, in referring to Wallach’s Fig. 8A: “Since each server performs as a primary with respect to one object and a secondary with respect to another object, it is a characteristic of the resident processes that they will run alternately in a primary and a backup mode depending on the particular object being processed.” (Wallach, col. 10, lines 40-45, emphasis added.) This one sentence, by itself, obliterates any perception of Wallach’s alleged relevance to Applicants’ claims. Applicant recites selecting ONE node as a master node, but Wallach says EACH SERVER PERFORMS AS A PRIMARY.

Indeed, each server within this single cluster being described in Wallach performs as a primary server, wherefore multiple primary servers are being disclosed within a

cluster - and there are multiple clusters in a network. And, since the Examiner is attempting to equate Applicants' network's master node to Wallach's "primary server", it is clear that this comparison fails, because in Wallach there is no selection of one node as primary. Rather, there is a selection of each node as primary. Wallach, therefore, does not disclose or suggest "means for selecting one of said plurality of nodes as a master node" as recited in claim 1. On this first basis alone, Wallach does not disclose or suggest all claim limitations of Applicants' claim 1.

Secondly, Applicants recite, inter alia, "means for subordinating all other of said plurality of nodes to said master node in a configuration defined by said master node and said all other of said plurality of nodes." (Emphasis added.) Since Applicants' "master node" is not disclosed in Wallach, per the above analysis, this claim element which also recites the same "master node" is also not disclosed, by default. However, assuming, *arguendo*, that Applicants' master node is disclosed (which it isn't) then this claim element is independently not disclosed because "all" other nodes are not subordinated to a so-called "master" node (primary server) in Wallach. It is submitted that the only other node which could be interpreted as being subordinated to a so-called master node in Wallach would be a secondary server which is subordinated to its primary server for that particular primary-secondary server pair: "An object which has neither a primary nor backup relationship with the server running the process will not be subject to detection, fail-over or fail-back processing." (Wallach, col. 10, lines 51-54; emphasis added) Thus, if not involved in the primary-secondary server pair, a server in that cluster is not subject to detection, fail-over, or fail-back and is therefore not "subordinated." Therefore, "means for subordinating all other of said plurality of nodes to said master node in a

configuration defined by said master node and said all other of said plurality of nodes” as recited in claim 1 is not disclosed or suggested by Wallach, because all nodes are not subordinated to a primary server in Wallach. On this second basis alone, Wallach does not disclose or suggest all claim limitations of Applicants’ claim 1.

Thirdly, Applicants recite, interalia, “said master node includes means for responding to a change to said domain configuration status in a manner to maintain said contents of said each said DDB identical to said contents of said every other said DDB.” (Emphasis added.) Again, since Applicants’ “master node” is not disclosed in Wallach, per the above analysis, this claim element which also recites the same “master node” is also not disclosed, by default. However, assuming, *arguendo*, that Applicants’ master node is disclosed (which it isn’t) then this claim element is independently not disclosed for the following reasons.

As previously noted, the final Office Action, page 9 associates Wallach’s “primary server” with Applicants’ “master node”, and further applies the following section of Wallach directly against this claim limitation of Applicant’s master node:

When server resident processes detect a failure of the primary server the enhanced database is updated to reflect the failure of the primary server, and to change the affiliation of the resource from its primary to its backup server. (Wallach, col. 3, lines 50-54.)

However, the above snippet to which the Examiner points does not tell the relevant story. This limited section does not say how the database is updated. But, the very sentence immediately following this above-quoted section, presented below, does say how the database is updated which clearly sets-apart Wallach’s primary server from Applicants’ master node:

The **updating and remapping is accomplished by server resident processes** which detect failure of the primary server, and remap the network resource server affiliation. (Wallach, col. 3, lines 54-57, Emphasis added.)

In the above circumstance, Wallach's primary server has failed. The Examiner is relying upon this failure of Wallach's primary server as being equivalent to Applicants' recited "change to said domain configuration status." Since Wallach is specifically and exclusively directed to backup and failover when a primary server fails, there are no other examples in Wallach which can be alleged as a "change to said domain configuration status". In other words, this is the only activity in Wallach upon which the Examiner can rely in this regard. According to lines 54-57 quoted above, the updating and remapping is accomplished by "server resident processes" which means that the remapping is accomplished by other software (i.e., "processes") resident on a server, i.e., software other than Wallach's primary server or primary server software. This is logical because, in this example, Wallach's primary server has failed wherefore it cannot accomplish anything, much less accomplish updating and remapping. Wallach's primary server is dead, at least momentarily.

But, by contrast, as called for in claim 1 Applicants' master node includes responding means (i.e., means included within itself) to respond to this change to domain configuration status in a manner to maintain contents of each DDB identical to contents of the other DDB's. This is radically different from the example to which the Examiner has pointed because on the one hand, Applicants' master node is maintaining the DDB contents identical across DDB's in the network but, on the other hand, Wallach's primary server is not performing this function. Other software, "resident processes", are being used in Wallach to maintain the DDB contents identical, at least within a cluster. For this



independent reason, Applicants' recited "responding means" which is included within its master node is not disclosed or suggested by Wallach. Clearly, "said master node includes means for responding to a change to said domain configuration status in a manner to maintain said contents of said each said DDB identical to said contents of said every other said DDB" as recited in claim 1 is not disclosed or suggested by Wallach. On this third basis alone, Wallach does not disclose or suggest all claim limitations of Applicants' claim 1.

The other cited references: Taylor, cited to show an IP addressing scheme for network communications; Bunnell, cited to show addition of network resources within a distributed directory database; and Zondervan, cited to show version numbers do not cure the above-noted deficiencies of Wallach.

MPEP § 2131 states that to anticipate a claim, the reference must teach every element of the claim. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ...claim." *See Richardson v. Suzuki Motor Co.*, 868 F. 2d 1226, 1236, 9USPQ2d 1913, 1920 (Fed. Cir. 1989). In this instance, at least three recited claim elements of claim 1 are not taught by Wallach.

In view of the above, it is respectfully requested that the 35 U.S.C. § 102(e) rejection of claim 1 be withdrawn and the claim allowed.

The other independent claims, claims 32 and 63 have been amended similarly to claim 1, recite limitations similar to those of claim 1, and are allowable for reasons given above with respect to claim 1.

Claims 2-3 and 5-31, dependent, directly or indirectly, from allowable claim 1 are also allowable at least for reasons based on their dependency from an allowable base claim.

Claims 33-34 and 36-62, dependent, directly or indirectly, from allowable claim 32 are also allowable at least for reasons based on their dependency from an allowable base claim.

Claims 64-65 and 67-92, dependent, directly or indirectly, from allowable claim 63 are also allowable at least for reasons based on their dependency from an allowable base claim.


## CONCLUSION

Reconsideration and allowance of claims 1-92 are respectfully requested. This amendment after final should be entered by the Examiner because the amendments to the claims merely combine limitations from dependent claims into the independent claims. Therefore, no further searching or consideration is required and, if the Examiner does not allow the application based on these amendments and remarks, the issues to be presented on appeal shall be narrowed-down.

Applicants expressly reserve their rights to file a continuation application to pursue patent protection consistent with language of the claims prior to the instant amendment.

To the extent that an extension of time may be needed in order to enter this amendment in this case, please consider this response as including a petition under 37 C.F.R. § 1.136 for such extension of time. Please charge any fee for such petition or any other fee or cost that may be incurred by way of this amendment to Patent Office deposit account number 05-0889. If the Examiner feels that a telephone conversation may serve to advance the prosecution of this application, he or she is invited to telephone Applicants' undersigned representative at the telephone number provided below.

Respectfully submitted,

  
JOEL WALL  
Registration No. 25,648

TELEPHONE:  
JOEL WALL ESQ.  
508-625-1323  
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